

## SUPPLEMENTARY RETURN.

(145a.)

SUPPLEMENTARY RETURN TO AN ADDRESS OF THE HOUSE OF COMMONS, dated 22nd March, 1909, for a copy of all correspondence, reports, documents, Orders-in-Council in the possession of the Government relating to the establishment of a Geodetic Service Bureau, and the commencement of a geodetic survey in Canada.

CHAS. MURPHY,  
*Secretary of State.*

*Brigadier Gen. Lake to Colonel Reade, Commandant, Royal Military College.*

OTTAWA, April 13, 1905.

COLONEL R. H. N. READE,  
Commandant,  
Royal Military College,  
Kingston, Ontario.

MY DEAR READE,—The Astronomer's Branch of the Department of the Interior here are about to establish a station at Kingston, Ontario, for primary triangulation, &c., for use in connection with military map making, and the department will be glad if you will co-operate and do anything you may be able to assist in the work of selecting a site and fixing the station.

Should you have any suggestions to offer, I should be pleased to have them, and will communicate with the Dominion Astronomer after hearing from you.

They want to place the station within your grounds. As they are doing the work for our benefit, please assist as far as you can.

P. LAKE.

*Brigadier Gen. Lake to the Minister of Militia and Defence, 14th April, 1905.  
see page 20, Sessional Paper No. 145.*

*Acting Deputy Minister of Militia and Defence to the Deputy Minister of the Interior, 15th April, 1905, see page 19, Sessional Paper No. 145.*

*Brigadier General Lake to the Acting Deputy Minister of Militia and Defence.*

HEADQUARTERS, OTTAWA, April 15, 1905.

The Deputy Minister,  
Militia and Defence.

As this was a matter of some urgency, I wrote the Commandant, R.M.C., direct, as per copy attached.

In order to assist our military surveys of the country between Ottawa and the St. Lawrence now in progress, the Chief Astronomer had undertaken the establishment astronomically at Kingston of a fixed base, and was sending down his assistants at



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once to select the site. It was a matter of urgency to let Colonel Reade know what was proposed and so I wrote to him direct. I trust you will approve of my action.

P. LAKE.

Approved,

E. F. JARVIS,

*Acting Deputy Minister of Militia and Defence.*

*Acting Deputy Minister of the Interior to the Acting Deputy Minister of Militia and Defence.*

DEPARTMENT OF THE INTERIOR, OTTAWA, April 20, 1905.

E. F. JARVIS, Esq.,

Acting Deputy Minister,

Department of Militia and Defence, Ottawa.

DEAR SIR,—I am in receipt of your letter of the 15th instant, inclosing a copy of a memorandum which has been submitted to Sir Frederick Borden by the Chief of the General Staff, with regard to the question of having a map of Canada prepared which would show the topographical features of the country.

In reply, I beg to state that the matter will receive careful consideration.

Yours truly

T. G. ROTHWELL,

*Acting Deputy Minister.**Colonel Reade to Brigadier General Lake.*

THE ROYAL MILITARY COLLEGE OF CANADA, KINGSTON, April 22, 1905.

My Dear General LAKE,—We will do anything we can to assist the Astronomer in fixing points for his triangulation; and, if the points are in our grounds, we will see that they are not interfered with. I have asked our Surveying Professor about it, but, as yet, he has no suggestion to make.

Yours sincerely,

R. READE.

*Assistant Director of Intelligence to the Dominion Geographer.*

OTTAWA, November 25, 1905.

JAMES WHITE, Esq., F.R.G.S.,

Geographer, Dept. of the Interior,

Ottawa, Ont.

SIR,—I am directed by Major-General Lake, Chief of the General Staff, to send you, herewith, copies of the letters referred to by him in conversation with you the other day.

He will be very much obliged if you have any suggestions to make if you will kindly send them to him as soon as convenient.

A. CLYDE CALDWELL, *Captain.**Assistant Director of Intelligence.*



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*Dominion Geographer to Brigadier General Lake.*

DEPARTMENT OF THE INTERIOR,

OTTAWA, December 16, 1905.

Brigadier-General LAKE,

Chief of General Staff,

Dept. of Militia and Defence.

SIR,—I beg to acknowledge the receipt of Captain Caldwell's communication of the 25th ultimo, inclosing copies of memorandum respecting the inauguration and carrying out of a primary triangulation of the settled portions of Canada.

In reply, I beg to say that I delayed answering till I could see the Chief Astronomer, Dr. King, personally, but, owing to his absence from the city, was unable to see him until last Wednesday. He then informed me that during the past summer his assistants were engaged in erecting signals, &c., and that during next summer he proposed to triangulate the country between Ottawa and Montreal.

As he has since seen you and has, I understand, explained his plans, it is not necessary for me to go further into this matter.

I gather from what Dr. King has stated that he has got the work under way, and, if he can get a vote each year, he will carry it on as expeditiously as the amount voted will permit. He is commencing with a small vote and will, I trust, get it increased from time to time, till it reaches reasonable dimensions. He is thus avoiding the rock on which all previous projectors of geodetic surveys in Canada have come to grief, namely, attempting to commence work on too ambitious a scale.

If at any future time, there is anything that I can do that will further or facilitate the work, I shall be pleased to do it.

JAMES WHITE,

*Geographer*

*Assistant Director of Intelligence to the Dominion Geographer.*

OTTAWA, December 18, 1905.

JAMES WHITE, Esq., F.R.G.S.,

Geographer, Dept. of the Interior,

Ottawa, Ont.

SIR,—I am directed by Major-General Lake, Chief of the General Staff, to acknowledge the receipt of your communication of the 16th instant, regarding a proposed triangulation survey, and to thank you for your kindness in offering to do anything to facilitate the work.

General Lake desires me to say, if there is anything in this branch which would be useful in any way to you, he would be pleased to let you make use of it.

A. CLYDE CALDWELL, *Captain.*

*Assistant Director of Intelligence.*

*Surveyor General to the Deputy Minister of Militia and Defence.*

DEPARTMENT OF THE INTERIOR,

OTTAWA, 20 Janvier, 1906.

Colonel L. F. PINAULT, C.M.G.,

Député-ministre de la Milice, Ottawa.

CHER COLONEL PINAULT,—Ci-inclus je vous transmets quelques notes au sujet du rapport sur le lever topographique du Canada. En raison de l'immense étendue du Canada, de ses forêts et du coût des communications dès qu'on s'éloigne des endroits



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habités, on ne peut se guider sur l'expérience des autres nations. C'est une étude à faire; elle demande du temps et des recherches approfondies et le gouvernement ne pourrait mieux faire que de la confier à des experts convenablement choisis. Tant que cela n'aura pas été fait, il est impossible de décider quel est le projet, qui convient le mieux pour le pays et toute opinion qui pourrait être exprimée à ce sujet n'aurait qu'une valeur bien restreinte.

E. DEVILLE.

*Deputy Minister of Militia and Defence to the Deputy Minister of Railways and Canals.*

OTTAWA, March 8, 1906.

M. J. BUTLER, Esq., C. E.,  
Deputy Minister of Railways and Canals,  
Ottawa. Ont.

DEAR MR. BUTLER,—I inclose a copy of the report of Major-General Lake, Chief of the General Staff, on a topographic survey of Canada; also a copy of the remarks of Mr. Deville, Surveyor-General, thereon.

Very truly yours,

L. F. PINAULT.

*Memorandum of Major-General Lake to the Minister of Militia and Defence on a topographic survey of Canada. See page 21, Sessional Paper No. 145.*

#### NOTES ON THE MEMORANDUM RESPECTING A TOPOGRAPHIC SURVEY OF CANADA.

By Mr. DEVILLE, Surveyor-General.

1. The need of a good topographical survey of Canada has frequently been brought to the attention of the Government. The objects to be served and the advantages to be derived therefrom are fully set forth in the memorandum and will be concurred in by every one conversant with the subject. So far, the Government has taken no action to carry out the many suggestions made in that connection, the question of cost being the principal obstacle. This question and the kind of survey to be made must be carefully considered before committing the country to such a large expenditure.

2. Various estimates of cost have been made from time to time. The latest is Major Hills' for a survey of the habitable portion of Canada to be published on a scale of half a mile to the inch; he figures the cost at ten millions of dollars. For a map on a scale of one mile to the inch, he increases the cost to twenty-three millions. His allowances for salaries and expenses are, in general, too low for this country and it may safely be predicted that the actual cost will be considerably more than his estimate.

3. The kind of survey to be made is not described in the memorandum; it is proposed that this should be settled by an inter-departmental conference. The cost, as well as the usefulness of the survey, depending upon the scheme adopted, it seems necessary that this should be settled in order that the Government may be able to come to a decision. In Major Hills' scheme for a map on the half-inch scale, a topographer working alone, without even a labourer to help, is supposed to survey three square miles every week day for nine months in the year; this represents about four and a half square miles per working day. The amount of topographical information collected by such a survey would be very small and the usefulness of the map very limited. On the other hand, a proper topographic survey with actual levelling and contouring would be very expensive. Should a cheap survey be made covering the



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whole habitable portion of the Dominion, or is it preferable to map only the most populated parts of the Dominion, and to make the survey in such a way that it will not have to be made over again? These are important questions which cannot be decided off hand and which require expert consideration. The conditions in Canada are unique; its extent is enormous and most of it is wooded. It is, therefore, impossible in a matter of surveys to be guided by the experience of other countries.

4. It is proposed in the memorandum to assemble an inter-departmental conference presided over by some unbiassed experts to formulate a scheme in accordance with the views of all concerned and report on the best method of forming a Central Topographical Survey Department to undertake the mapping of the whole country.

Such report is necessary before the matter can be taken up by the Government; the assembling of an inter-departmental conference is a cheap method, but, perhaps, not the best of obtaining this report. The subject has been for several years under consideration by the Royal Society of Canada. They recognize that the question is a most complex one and do not attempt to say what should be done; they merely ask that a thorough investigation should be made before committing the country to any definite scheme and they proposed the appointment of a Commission to inquire into the subject, collect evidence and data, and submit a practical scheme. If the subject, involving as it does the expenditure of many millions of dollars, is worth investigating, it is surely worth employing a special commission for the purpose even though it may cost a little more than an inter-departmental conference.

*Deputy Minister of Railways and Canals to the Deputy Minister of Militia and Defence.*

DEPARTMENT OF RAILWAYS AND CANALS.

OTTAWA, ONT., March 9, 1906.

Lt.-Col. L. F. PINAULT,  
Deputy Minister of Militia and Defence,  
Ottawa.

MY DEAR COLONEL PINAULT,—I am very much obliged to you for your kind favour of the 8th instant, inclosing copy of Major-General Lake's remarks on a topographical survey of Canada; and am frank in saying that I am in hearty accord with the suggestion which he makes. The Can. Soc. of Civil Engineers are about to make a request of the Honourable the Premier that he accord them an interview to consider the matter; and may I hope that, when the occasion arises, you will be able to give us the benefit of your assistance, on that occasion.

Yours faithfully,

M. J. BUTLER.

*Deputy Minister of Militia and Defence to the Director of the Geological Survey Department.*

OTTAWA, March 10, 1906.

ROBERT BELL, Esq., M.D., LL.D., &c.,  
Director of Geological Survey Department,  
Ottawa, Ont.

DEAR DOCTOR,—I inclose a copy of the report of Major-General Lake, chief of the general staff, on a topographic survey of Canada; also a copy of the remarks of Mr. Deville, Surveyor-General, thereon.

Very truly yours,

L. F. PINAULT.



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*Director of the Geological Survey Department to the Deputy Minister of Militia and Defence.*

GEOLOGICAL SURVEY OF CANADA,

OTTAWA, March 12, 1906.

Colonel L. F. PINAULT, C.M.G.,  
Deputy Minister of Militia,  
Ottawa.

DEAR COLONEL PINAULT,—I have just received your favour of the 10th instant, inclosing copy of Major-General Lake's report on the topographical survey of Canada and of the remarks thereon of Surveyor-General Deville. I beg to thank you for this document, which is of the greatest interest to me in connection with our own topographical and geological work.

ROBERT BELL.

*Memorial of the Council of the Canadian Society of Civil Engineers to the Right Hon. Sir Wilfrid Laurier, 2nd April, 1906, see page 30, Sessional Paper No. 145.*

*Maj. Gen. Lake to the Minister of Militia and Defence.*

APRIL 20, 1906.

The Honourable the Minister of  
Militia and Defence.

GEODETTIC SURVEY OF CANADA.

I am in cordial agreement with the proposal made by the Canadian Society of Civil Engineers, in the memorandum from the Council of the Society inclosed herein, dated 2nd April, 1906. The object of that memorandum is to advocate what, as you are aware, I have more than once recommended for your consideration, viz., the co-ordination of the work of the existing survey branches of different government departments, with the view to the inauguration of a general survey for Canada.

Upon one point only am I not in complete accord with the council of the society. In the last paragraph but one of their memorandum, they deprecate entering at once on the expenditure that would be necessitated by the establishment of a Geodetic Survey for Canada, although they admit one will have to be inaugurated in the near future. They argue that such a geodetic survey is one that should 'grow out of' rather than 'be superimposed upon' existing conditions. It may be that the council attach to the expression 'a Geodetic Survey' a different meaning to mine, but, as I understand it, the most valuable feature of a 'geodetic' survey from a practical point of view is that it furnishes, in the shape of its triangulation, the framework upon which all other surveys are based. If this framework is, in the words of the council, to 'grow out of existing conditions,' I cannot but think that there is a risk not only of delay, but of wasted effort. The council admit that different government survey branches are working under different conditions, upon different methods, under varying projections, and without connection. I hardly see how their results are to be co-ordinated without the general framework furnished by a geodetic survey. And it would further appear to me that inasmuch as the different branches are necessarily basing their work upon imperfect data, to delay the commencement of the framework of triangulation upon which the accurate survey of the country must ultimately be based, is to condemn these departments for a greater or less period to work under conditions which forbid accuracy, and to waste a great portion of the good work of the skilled surveyors employed therein.



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I, therefore, still strongly advocate the commencement of the preliminary triangulation of a geodetic survey at as early a date as is possible, assuming the necessary skilled observers to be available. I cannot doubt that these would be forthcoming.

Apart from this one point, however, I earnestly hope that you will see your way to support the proposal made in the last paragraph of the memorandum from the council of the society. The proposal contained in my memo. of January 8 contemplated the assembly of an inter-departmental conference mainly composed of the heads of existing government survey branches. I think it immaterial whether such a conference, or the small commission of experts advocated by the Canadian Society of Civil Engineers, be entrusted with the duty, but in any case existing survey branches should be fully represented on that commission, if co-ordination of the work upon which they are severally engaged is to be brought to a satisfactory conclusion.

P. LAKE,

*Chief of the General Staff.*

Would it not be well to submit this question to the Minister in Council, in order that a policy may be adopted so far as this department is concerned?

E. F. JARVIS,

*For D.M., M. and D.*

*Major-General Lake to the Militia Council.*

GEODETIC SURVEY OF CANADA.

May 11, 1906.

1. With a view to determining the future policy to be adopted by the Department of Militia and Defence, in connection with the preparation of a general survey of Canada, the Chief of the General Staff has the honour to submit the following remarks for the consideration of the Minister in Militia Council.

2. The Chief of the General Staff is in cordial agreement with the proposal contained in the accompanying memorandum by the Council of the Canadian Society of Civil Engineers, dated April 2, 1906; in fact he has already advocated on more than one occasion what the Council therein recommended, viz., the co-ordination of the work of the existing Survey Branches of different Government Departments, with a view to the inauguration of a Geodetic Survey of Canada.

3. Upon one point only is he not in complete accord with the Council of the Society. In the last paragraph but one of their memorandum, they deprecate entering at once on the expenditure that would be necessitated by the establishment of a Geodetic Survey, although they admit that one will have to be inaugurated in the near future. They argue that such a survey should 'grow out of' rather than be 'superimposed upon' existing conditions. It may be that the meaning which the Council attach to the expression 'a Geodetic Survey' has been misunderstood, but, if not, the most valuable portion of a 'Geodetic Survey' from a practical point of view is that it furnishes, in the shape of its triangulation, the accurate framework upon which all other surveys are based. If this framework is, in the words of the Council, to 'grow out of existing conditions,' there would surely be a risk not only of delay but of wasted effort.

4. The Council of the Society admit that different Government Survey Branches are working under different conditions, upon different methods, under varying projections, and without connection. It is difficult to understand how results are to be co-ordinated without the general framework furnished by a Geodetic Survey. And it would further appear that, inasmuch as the different Branches are necessarily basing their work upon imperfect data, to delay the commencement of the framework of triangulation upon which the accurate survey of the country must ultimately be based,



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is to condemn these Departments for a greater or less period to work under conditions which forbid accuracy, and to waste a great portion of the good work of the skilled surveyors employed therein.

5. The Chief of the General Staff, therefore, still strongly advocates the commencement of the preliminary triangulation of a geodetic survey at as early a date as is possible, assuming the necessary skilled observers to be available, about which he has but little doubt.

6. Apart from that one point, however, he earnestly hopes that the Minister in Militia Council will support the proposal made in the last paragraph of the memorandum under reference.

7. In his Minute, dated January 8, 1906, the Chief of the General Staff put forward a proposal that an Inter-departmental Committee, mainly composed of the heads of existing government survey branches, should be assembled at an early date. It is immaterial whether such a Committee, or the small commission of experts proposed by the Canadian Society of Civil Engineers, be entrusted with the duty, but, in either case, existing survey branches should be fully represented, if co-ordination of the work upon which they are severally engaged is to be brought to a satisfactory conclusion.

8. On this conference the mapping section of the headquarters Intelligence Department should undoubtedly be represented by an officer specially selected. It is too soon to discuss the share in the work of surveying which he should undertake that the Militia Department should carry out, but it may in general terms be stated that the Department should endeavour to co-operate in every way possible with the other departments interested, with the object of setting on foot a topographical survey as soon as possible. At the same time it should not be forgotten that it is essential for defence purposes that we should as soon as possible have a topographical map of those portions of the country (and particularly that adjoining the southern frontier) on which, under conceivable circumstances the Canadian forces might be called upon to concentrate in defence of the country. If the representative of the department on the commission was instructed to keep in constant communication with the Chief of the General Staff, it would be easy for the Minister at all times to control the extent to which this Department undertakes to work in co-operation with others.

9. He suggests that this memorandum be placed on record in the proceedings of Council as a statement of policy.

P. LAKE,

*Chief of the General Staff.*

*Order in Council constituting the Committee on Surveys, approved on the 13th November, 1906, see page 42, Sessional Paper No. 145.*

*Major-General Lake to the Deputy Minister of Militia and Defence.*

November 20, 1906.

The DEPUTY MINISTER,  
Militia and Defence.

#### GEODETIC SURVEY OF CANADA.

The Minister's report to Privy Council, dated 19th July, 1906, on the subject of an Ordnance Survey for Canada has now been approved.

Put shortly, the proposal approved by the Governor-General is that made in the concluding paragraph of the memorandum of the Canadian Society of Civil Engineers, dated 2nd April, 1906, as modified by the recommendations of the Minister.

The proposal, therefore, now approved by His Excellency, is that a small Committee of experts should be assembled, and authorized and instructed by the Dominion Government to obtain such information, both in Canada and abroad, as will enable it



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to report upon a satisfactory scheme for the co-ordination of the various surveys now being conducted by the Dominion Government and the adoption of such methods as will ensure permanent records, both in the field and in the office;—these methods should be such as will naturally adapt themselves to the future establishment of a trigonometrical survey of the country;—and further that the committee be instructed to outline the best method of inaugurating a geodetic survey for Canada in accordance with the foregoing considerations.

That portion of the memorandum of the Society of Civil Engineers which was amended in accordance with the Minister's views is as follows:—

The Society recommend that a majority at least of the Committee should not be connected with existing survey departments.

The Minister's suggestion, as approved by His Excellency, lays down that the Committee should be composed as follows:—

Interior Department, 2 members.

Geological Survey, Marine and Fisheries, Railways and Canals, Public Works, and Militia Departments, 1 member each.

The Minister, also, suggested that one representative each from the scientific staff of Toronto and McGill Universities be added to the committee. This I understand from him was approved by the Privy Council.

The action now to be taken appears to me to be, to send copies of the approved report to the several departments concerned and to suggest to them the advisability of naming representatives as proposed in the report for the purpose of deciding upon the preliminary steps necessary to carry out the recommendations. I should imagine that the Department of the Interior should be the one to take action, but as the proposal emanated from this Department, I should be quite ready, should the other Departments think it desirable, that the meeting should be held in my room at any time convenient.

Probably the Minister should like me to represent the Department at the preliminary conference, though I incline to the opinion that for subsequent meetings it might be desirable to make Captain Anderson our official representative.

P. LAKE,

*Chief of the General Staff.*

*Acting Deputy Minister of Militia and Defence to the Deputy Minister of Public Works.*

OTTAWA, November 28, 1906.

The DEPUTY MINISTER,  
Department of Public Works,  
Ottawa.

SIR,—I am directed by the Honourable the Minister of Militia and Defence to invite your attention to a report of a Committee of the Privy Council, approved by His Excellency The Governor-General on the 13th November, 1906, on the subject of a Topographical and Geodetic Survey for the Dominion of Canada. A copy of this report is attached for convenience of reference.

It will be observed from this report that the proposals therein submitted by Sir F. Borden, after, it is understood, personal discussion with the Honourable Mr. Oliver, have been approved, and I am now to invite the co-operation of your Department in taking the further measures required. The first step necessary would appear to be that your Department should nominate representatives to act upon the Committee, which it is proposed in the last paragraph of the report to assemble. The Minister of Militia suggests that, as soon as all the various Departments concerned in survey operations have appointed their representatives, an informal meeting should take place at which these representatives should consider the procedure to be followed, and should make recommendations with a view to the nomination of gentlemen to represent McGill and Toronto Universities on the Committee.



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The Minister further suggests that this preliminary meeting might, if you concur, take place in the office of Major-General Lake, Chief of the General Staff, at the Militia Department. Subsequent meetings of the Committee could be held wherever the members might find it most convenient.

You will no doubt agree with Sir F. Borden in considering that a meeting is desirable at as early a date as possible.

E. F. JARVIS,  
*Acting Deputy Minister, Militia and Defence.*

Similar letter sent to;

Deputy Minister, Department of Railways and Canals.

“ “ “ Marine and Fisheries.

“ “ “ the Interior.

Director of the Geological Survey.

*Director of the Geological Survey to the Acting Deputy Minister of Militia and Defence.*

GEOLOGICAL SURVEY DEPARTMENT,

OTTAWA, November 30, 1906.

E. F. JARVIS, Esq.,  
Acting Deputy Minister,  
Dept. of Militia and Defence,  
Ottawa.

DEAR MR. JARVIS,—I beg to acknowledge the receipt of your letter of the 28th inst., with copy of the Order-in-Council of the 13th Nov., 1906, relating to the appointment of a Committee on Government Surveys.

I am heartily in accord with the appointment of such a Committee and feel sure that the results of its deliberations will prove of great benefit to the survey branches of the Service.

I have, with the Minister's approval, the honour of appointing myself the member of the Committee from the Department of the Geological Survey.

I am quite in accord with the proposal of an early meeting of the Committee in the office of Major-General Lake, and shall await a notice from him.

Yours sincerely,

A. P. LOW.

*Deputy Minister of Railways and Canals to the Acting Deputy Minister of Militia and Defence.*

DEPARTMENT OF RAILWAYS AND CANALS.

OFFICE OF THE DEPUTY MINISTER AND CHIEF ENGINEER,  
OTTAWA, ONT., Nov. 30, 1906.

E. F. JARVIS, Esq.,  
Acting Deputy Minister,  
Militia and Defence Dept.,  
Ottawa.

SIR,—I have the honour to acknowledge the receipt of your letter of the 27th instant, transmitting a copy of report of the Privy Council, on the subject of the Topographical and Geodetic Survey of the Dominion of Canada. I shall be glad to meet the representatives of the other Departments at any time that may be named by the Convener, who I presume will be Major-General Lake.

Yours faithfully,

M. J. BUTLER.



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*Deputy Minister of Marine and Fisheries to the Secretary, Militia Council.*

OTTAWA, December 3, 1906.

The SECRETARY,  
Militia Council,  
Headquarters,  
Ottawa.

SIR,—Referring to a letter of the Acting Deputy Minister of Militia and Defence, dated the 28th ultimo (No. C. 308), relative to a Topographical and Geodetic Survey for the Dominion of Canada, I have the honour to inform you that the Minister of Marine and Fisheries has been pleased to nominate Mr. W. J. Stewart, Chief Hydrographer of Canada, to act as the representative of his Department upon the proposed Committee on such survey work.

F. GOURDEAU,  
*Deputy Minister of Marine and Fisheries.*

*Deputy Minister of Public Works to the Acting Minister of Militia and Defence:*

DEPARTMENT OF PUBLIC WORKS, OTTAWA, December 10, 1906.

The ACTING MINISTER  
of Militia and Defence,  
Ottawa.

SIR,—In reply to your letter of the 20th November, concerning the appointment of a departmental committee on the subject of Topographical and Geodetic Surveys for the Dominion of Canada, I beg to state that I am very thankful for the invitation conveyed to this Department, and will be glad to send a representative as soon as we are notified of the date at which the meeting will be held.

A. GOBEIL,  
*Deputy Minister.*

*Major General Lake to the Deputy Minister of Militia and Defence:*

DEPARTMENT OF MILITIA AND DEFENCE,  
December 13, 1906.

DEPUTY MINISTER,  
\_\_\_\_\_

I should like to send a reminder to the Department of the Interior. Letter, herewith, for signature, if approved.

P. LAKE,  
C.G.S.

*Acting Deputy Minister of Militia and Defence to the Deputy Minister of the Interior.*

OTTAWA, December 13, 1906.

The DEPUTY MINISTER,  
Department of Interior,  
Ottawa.

SIR,—May I venture to ask the favour of a reply at your earliest convenience to my letter of 28th ultimo on the subject of a Topographical and Geodetic Survey for the Dominion of Canada?

The question of providing in the Estimates for the survey work to be carried on by this Department next summer is shortly coming up for consideration, and it would



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be, a great advantage if the Conference of representatives of the various Survey Departments, to which reference is made in my letter under reply, could take place before the matter is considered.

E. F. JARVIS,

*Acting Deputy Minister of Militia and Defence.**Deputy Minister of Public Works to the Department of Militia and Defence.*

THE DEPARTMENT OF PUBLIC WORKS,

OTTAWA, December 20, 1906.

Major CHARLES F. WINTER,  
Dept. of Militia and Defence,  
Ottawa, Ont.

SIR.—In reply to your letter of the 17th instant, I beg to inform you that Mr. Rene Steckel, now in charge of the Geodetic survey of this Department, will attend as representative of the Department of Public Works in the office of Major-General Lake, C.B., C.M.G., this afternoon, the 20th instant, at 3 o'clock, to confer with the representatives of other departments on the question of geodetic surveys in the Dominion of Canada.

A. GOBEIL,

*Deputy Minister.**Deputy Minister of the Interior to the Acting Deputy Minister of Militia and Defence.*

OTTAWA, December 20, 1906.

E. F. JARVIS, Esq.,  
Acting Deputy Minister of  
Militia and Defence  
Ottawa.

DEAR SIR,—I have your letters of the 25th ultimo and 13th instant, with reference to the proposed appointment of a Topographical and Geodetic Survey Committee for the Dominion of Canada, and in compliance with the request contained in your letter of the 28th ultimo, referred to, beg to nominate Dr. E. Deville, Surveyor-General, and Dr. W. F. King, Chief Astronomer, as the representatives of this Department.

W. W. CORY.

*Major General Lake to members of the Committee on Surveys.*

OTTAWA, December 26, 1906.

DEAR ——— In accordance with the request made at the meeting of our Conference on December 20th, I forward, herewith, copy of the Order-in-Council under which the Conference on the subject of a Geodetic Survey for Canada was assembled.

P. LAKE,

This letter sent to;

W. F. KING, Esq., *Dominion Astronomer.*A. P. LOW, Esq., *Geological Survey.*M. J. BUTLER, Esq., *Dep. Min., Department of Railways and Canals.*RENE STECKEL, Esq., *Department of Public Works.*CAPT. DEVILLE, *Surveyor-General.*W. J. STEWART, *Department of Marine and Fisheries.*



SESSIONAL PAPER No. 145a

*Report of the 'Committee on Surveys' to the Minister of Militia and Defence, 15th February, 1907, see page 35, Sessional Paper No. 145.*

*Extracts from statements or reports showing the practical benefits derived from Topographical Surveys, see page 39, Sessional Paper No. 145.*

*Chief Astronomer to the Minister of Militia and Defence:*

DEPARTMENT OF THE INTERIOR,  
DOMINION ASTRONOMICAL OBSERVATORY,  
OTTAWA, CANADA, March 2, 1907.

The Hon. Sir FREDERICK WILLIAM BORDEN, K.C.M.G.,  
Minister of Militia and Defence.

SIR,—I have the honour to transmit, herewith, the Report, duly signed, of the Committee on Surveys, constituted under the Order-in-Council of 13th November, last.

I regret that the unfortunate illness of Mr. Low, Director of the Geological Survey, has prevented his signing the Report, but I am assured that it is quite in accordance with his views. He took an active part in the preparation of the report.

You will observe that Dr. Deville and Mr. Steckel sign subject to the objections stated in their annexed memoranda.

These memoranda are transmitted herewith.

W. F. KING,  
*Chief Astronomer, Chairman of Committee.*

*Maj.-Genl. Lake to the Minister of Militia and Defence.*

OTTAWA, March 28, 1907.

The Honourable  
The MINISTER of Militia and Defence.

The inclosed paper is the Report of the Committee on Surveys which was constituted under the Order-in-Council of November 13, 1906, and which the Committee decided to submit to you.

The following precis will give you an idea of what the Report contains.

1. The Members of the Committee were as follows:—

Dr. W. F. King, Dominion Astronomer, Chairman.  
Mr. M. J. Butler, Deputy Minister, Department of Railways & Canals.  
Mr. A. P. Low, Geological Survey.  
Dr. E. Deville, Surveyor-General, Department of Interior.  
Mr. R. Steckel, Department of Public Works.  
Mr. W. J. Stewart, Department of Marine & Fisheries.  
Professor C. H. McLeod, McGill University.

“ L. B. Stewart, Toronto “

“ E. Marceau, Laval “

Maj.-Gen. P. H. N. Lake, Department of Militia & Defence.

2. The Committee begin by stating that “a comprehensive and reliable survey of the Dominion for the production of an accurate topographic map, based upon a network of triangulation and showing the natural and artificial features of the country, is of urgent necessity to the people of Canada from the standpoint of economy, the extension of public undertakings and the development of the natural resources of the country.”

This is their main recommendation, for which they adduce various cogent reasons.



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3. Secondly, they strongly advise the co-ordination of all existing survey material, pointing out that, for this purpose alone, if for no other, the "comprehensive surveys" mentioned in their first recommendation would be necessary.

4. Thirdly, they advocate the establishment of a central record office, where the results of all surveys should be filed for reference—deposit in that office of such results being made compulsory.

5. Fourthly, they propose the institution of a central bureau for the compilation and engraving of all maps so as to secure, as far as possible, both uniformity of system and economy of production.

6. Fifthly, the Committee consider that "the controlling and topographic surveys, the land triangulation basis of the Hydrographic Survey and the proposed Record Office and Map Bureau should form branches of one Department of the Public Service" and "should be included with the Department of the Geological Survey."

7. They propose to leave the making of surveys for special departmental purposes, which may require a class of work distinct from ordinary topographic surveying, to the departments to which these matters now appertain, merely inviting them to make their work, as far as possible, of a nature useful for permanent survey purposes.

8. The co-operation of the Provincial Survey Departments is to be invited.

9. A calculation of the sums now voted for survey purposes shows that, merely in the Survey Departments and Branches proposed (see para. 6) to be brought together, something over \$900,000 is already spent annually.

The Committee believe that, under unified management, sufficient money could be found from these votes alone for the initial stages of the general triangulation survey.

Even under existing conditions some \$60,000 could be made available at once for starting the controlling triangulation. This is as much as could profitably be spent for the first year or two, until the new Department was fully organized and at work; when the amount of its votes would naturally depend on the amount of work required from it and the proved value of that work.

10. Finally, as the Government would require to have before it specific proposals in regard to the manner in which the general triangulation and topographic survey should be inaugurated, the Committee recommend the appointment of a permanent Survey Board to work out the details. This Board would be similar in composition to the present Committee, in that the same departmental and other interests would be represented upon it, but it would not necessarily consist of the same individuals.

Its duty would be to advise as to the development and methods of the control survey, to suggest such regulations as might be desirable and to constitute a Board of Conference for the several survey departments.

An appropriation not exceeding \$8,000 would be required for running expenses. This would be the only additional cost of the Committee's proposals for the *first two years*.

11. The foregoing report of the Committee is unanimous as far as eight out of the ten members are concerned. Those who dissent more or less widely are Dr. Deville and Mr. Steckel.

12. I trust I am not misrepresenting Dr. Deville's attitude if I say that, in my opinion, his memorandum exhibits generally an attitude of opposition to *any* change in existing arrangements, although he admits that a comprehensive survey of the Dominion would in itself be a valuable public asset.

13. This attitude of mind seems to be sufficiently exemplified by the argument used on page 2 of his memo. He there states the area of Canada to be 4,000,000 square miles, and then divides that number by 71,180,626, the total revenue in dollars of the year. This gives as a result an average revenue of only \$17.80 per square mile, which he represents as too small a revenue to justify a good survey.

Apart from the fact that a similar argument could be used to prove that the Dominion of Canada could not afford a survey of, say, the Niagara Peninsula, he appears to damage his own case by overstating it largely.



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The latest Interior Department official map of Canada, 1906, gives its area at 3,729,665 square miles, not 4,000,000. Of this area the Arctic Islands and Northwest Territories comprise 1,992,733 square miles, leaving a balance of 1,806,932 square miles for the organized provinces and the Yukon.

14. A glance at the map of the Dominion will show that detailed surveys of at least one half of the remaining area, though desirable, cannot be really necessary for many years to come. If this be correct, it may safely be said that the area of the Dominion which ought to be accurately surveyed in the near future is scarcely 1,000,000 square miles, i.e. is less than a quarter of the figure given by Dr. Deville, while the ever increasing revenue of Canada is now 40 per cent larger than it was in 1905.

In short, I cannot but think that Dr. Deville raises the bogey of an enormous ultimate expenditure quite unnecessarily. No doubt, by the time the Northern Territories and the Polar Islands had been mapped in detail and included in the general survey, after, perhaps, a century or so of work, the sum of the yearly votes would have amounted up to a large total; but the amount involved in carrying out a sane policy of surveying the more important and settled portions of the Dominion in the first instance can be met by a very moderate sum in the yearly estimates. He would, no doubt, regard \$50,000,000 as in itself a very large total, but that would merely represent the sum of the *present* unsystematic expenditure in less than 50 years time.

15. Mr. Steckel's main objection to the Report lies in his dislike to the proposals for a control survey and central department (essentially clauses 6 and 9 of the Report) on the ground that it might, and probably would, as he thinks, interfere with existing departmental surveys.

The attitude of his mind betrays itself in the first five words of his report, para. 3, where, in speaking of the Committee's proposals, he says;—'Instead of *raiding* the Departments,' &c., &c.

With these exceptions, I do not gather that he is seriously at variance with the general views of the rest of the Committee, but that he, too, has alarmed himself at the phantom of a huge ultimate total of money spent, when the sum of the annual expenditures is totalled up in the distant future.

16. I confess that I do not share the apprehensions of Dr. Deville and Mr. Steckel as to enormous expenditure. I believe that, were a central Survey Department established, the amount already voted in estimates would be found to provide all the money required for the next ten years. And it is a mere truism to remark that Parliament controls the estimates which it votes every year, and that the amount of money voted for the General Survey in any year will depend upon the importance which the Minister in control, and the Government, attach to that Survey.

17. As regards action on the Committee's Report, I presume that you will, in due course, make a report to Council. In view of the present state of public business, I suggest that this be deferred until your return from England.

P. LAKE,  
C.G.S.

*Objections of the Surveyor General to the report of the majority of the Committee on Surveys, see page 45, Sessional Paper No. 145.*

*Objections of Mr. Steckel to the report of the majority of the Committee on Surveys, see page 47, Sessional Paper No. 145.*

*Certified copy of a Report of the Committee of the Privy Council, approved by His Excellency The Governor-General on the 23rd February, 1909.*

The Honourable

The MINISTER of Militia and Defence.

On a memorandum, dated February 19th, 1909, from the Minister of Militia and Defence, submitting the Report of the Committee on Surveys, which was constituted



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in pursuance of the Order-in-Council, dated November 13, 1906, together with a memorandum thereon by the then Chief of the General Staff, under date March 28, 1907.

The Minister observes that the Report, as will be seen by the dates, was submitted nearly two years ago, and the Minister feels that some explanation of the delay which has occurred in presenting it is necessary. This delay has been due to two causes; first, the fact that, within a week of the Report reaching him, the Minister was called upon to accompany the Premier to England for the purpose of attending the Imperial Conference of 1907, and, secondly, to the protracted illness of Mr. A. P. Low, of the Geological Survey, to whom, he was given to believe, it had been intended to entrust the duty of carrying into practical effect the recommendations, in the direction of inaugurating a Central Survey Department, which the Committee were understood to have made. When Mr. Low was able to return to duty, the Dominion Elections were so near at hand that it was practically impossible to deal with such an important question at the moment, and the presentation of the Report was thus further delayed.

The Minister recommends, for Your Excellency's approval, the Report presented by the majority of the Committee. What the majority report recommends is shortly stated in the first ten paragraphs of the memorandum by the Chief of the General Staff of the Militia. The minority report was signed by two members of the Committee Dr. Deville and Mr. Steckel, whose opinions, no doubt, deserve due consideration, but do not, in the view of the Minister, carry sufficient weight to counter-balance the very strong and important recommendations made by the majority of the Committee.

The Minister, therefore, recommends that steps be taken, at as early a date as Your Excellency's Government may find it practicable, to carry into effect the main recommendations of the Committee.

The Committee submit the same for approval.

F. K. BENNETS,  
*Assistant Clerk of the Privy Council.*